



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,699	10/16/2003	Fred Hartnett	200209079-1	9165

22879 7590 01/23/2007
HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

TANG, MINH NHUT

ART UNIT	PAPER NUMBER
----------	--------------

2829

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/686,699

Applicant(s)

HARTNETT ET AL.

Examiner

Minh N. Tang

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☒ Claim(s) 9, 10, 12, 13, 28 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 11 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-10, 12, 28 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hartnett et al. (U.S.P. 6,437,587).

As to claim 9, Hartnett et al. discloses, in Figs. 1-4, an electronic circuit assembly test apparatus (10), comprising: first probe means (22) coupled to a support member (18) and adapted to contact corresponding test areas on an electronic circuit assembly (12); support means (20) movably (i.e., for making electrical contact with pads 34) coupled to the support member (18); and second probe means (42) coupled to the support means (20) and configured to contact test areas on the electronic circuit assembly (12) different than (see, for example, column 4, lines 1-11) the test areas contacted by the first probes means (22), the second probe means (42) having a spacing density of probes greater than a spacing density of probes of the first probe means (22, see column 3, lines 47-56).

As to claims 10 and 32, Hartnett et al. discloses in Figs. 1-4, the support means (20) (or probe assembly support 24 in claim 32) is movably coupled to the support member (18) to enable non-lateral movement of the support means/probe assembly (20) relative to the support member (18).

As to claim 12, Hartnett et al. discloses in column 8, lines 12-20, means (alignment devices and machines) for aligning the second probe means (42) with corresponding test areas of the electronic circuit assembly (12).

As to claim 28, Hartnett et al. discloses, in Figs. 1-4, an electronic circuit assembly test apparatus (10), comprising a support member (18) having a plurality of probes (22) configured to contact a first plurality of test areas of an electronic circuit assembly (12); and a probe assembly (20) having a probe assembly support (24) movably (i.e., for making electrical contact with pads 34) coupled to the support member (18), the probe assembly (20) having a plurality of probes (42) coupled to the probe assembly support (24) and configured to contact a second plurality of test areas of the electronic circuit assembly (12), wherein the probes (42) of the probe assembly (20) are spaced to accommodate a spacing density of the second plurality of test areas greater than a spacing density of the first plurality of test areas (see column 3, lines 47-56).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 2829

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 13 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartnett et al. (U.S.P. 6,437,587) in view of Potter (U.S.P. 6,028,437).

As to claims 13 and 31, Hartnett et al. discloses all the limitations in the claims except for the probe assembly comprises at least one limiter adapted to limit movement of the probes of the probe assembly toward the electronic circuit assembly. Potter discloses, in Fig. 1, a probe membrane (120) having probes (122) and a limiter (123). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hartnett et al. by providing a limiter as taught by Potter so that the probes would not driven beyond their elastic limit.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hartnett et al. (U.S.P. 6,437,587) in view of Siew et al. (U.S.P. 6,885,205).

As to claim 30, Hartnett et al. discloses all the limitations in the claims except for the probe assembly comprises at least one alignment guide adapted to cooperate with an alignment guide disposed on the electronic circuit assembly. Siew et al. discloses, in Figs. 3-3 and 3-4, at least one alignment guide (116-3, 166-4 and 169) adapted to cooperate with an alignment guide (through holes) disposed on the electronic circuit assembly (102). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hartnett et al. by providing at least

Art Unit: 2829

an alignment guide as taught by Siew et al. for accurately aligning the circuit board to be tested with the probes of the test apparatus.

7. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hartnett et al. (U.S.P. 6,437,587) in view of Aussant et al. (U.S.P. 5,698,990).

As to claim 33, Hartnett et al. discloses all the limitations in the claims except for at least one spring disposed between the probe assembly and the support member. Aussant et al. discloses, in Fig. 2, a probe apparatus comprising a probe plate (54) having a plurality of probe (68), a top plate (56), at least one spring assembly (10) disposed between the probe plate (54) and the top plate (56). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the test apparatus of Hartnett et al. by providing a spring between the probe assembly and the support member as taught by Aussant et al. so that it would add flexibility in test fixture design.

Allowable Subject Matter

8. Claims 1-8 are allowed over the art of record.

9. Claims 11 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The art of record does not disclose, nor would it be obvious to modify the art of record so as to include the limitations the probe assembly coupled to the support

Art Unit: 2829

member to enable lateral movement of the probe assembly relative to the support member.

Response to Arguments

11. Applicant's arguments filed November 21, 2006 have been fully considered but they are not persuasive:

Applicants, in the Remarks page 7, asserted that Hartnett does not disclose or even suggest movement of the probe assembly 20 of Hartnett relative to the board 18 of Hartnett, nor is there any suggestion or motivation to provide any such movement in the Hartnett apparatus. The Examiner respectfully disagrees. In Hartnett apparatus, the probe assembly 20 with probe pins 42 disposed therein would make electrical contact with the pads 34 disposed on the board 18 and to be able to do so the probe assembly would have to move for making such electrical contact. Therefore, it is believed that Hartnett discloses a support means movable coupled to the support member or a probe assembly having a probe assembly support movably coupled to the support member as claimed in independent claims 9 and 28.

Communication

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh N. Tang whose telephone number is (571) 272-1971. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha T. Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2829

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MINH NHUT TANG
PRIMARY EXAMINER

01/16/07